Exploring Aeronautics			
2007 Mathematics			
Academic Standards			
Minnesota Mathematics			
Grade 5			
Activity/Lesson	State	Standards	
The Resource Center	MN	MA.5.5.1.2.3	Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.
Integrating with Aeronautics	MN	MA.5.5.1.1.3	Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Integrating with Aeronautics	MN	MA.5.5.1.2.3	Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.
Integrating with Aeronautics	MN	MA.5.5.1.3.3	Estimate sums and differences of decimals and fractions to assess the reasonableness of results.
Integrating with Aeronautics	MN	MA.5.5.2.1.1	Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.
Scientific Method(124-144)	MN	MA.5.5.4.1.2	Create and analyze double-bar graphs and line graphs by applying understanding of whole numbers, fractions and decimals. Know how to create spreadsheet tables and graphs to display data.

Exploring Aeronautics			
2007 Mathematics			
Academic Standards			
Minnesota Mathematics			
Grade 6			
Activity/Lesson	State	Standards	
The Resource Center	MN	MA.6.6.1.1.1	Locate positive rational numbers on a number line and plot pairs of positive rational numbers on a coordinate grid.
The Resource Center	MN	MA.6.6.1.1.2	Compare positive rational numbers represented in various forms. Use the symbols <, = and >.
The Resource Center	MN	MA.6.6.2.3.2	Solve equations involving positive rational numbers using number sense, properties of arithmetic and the idea of maintaining equality on both sides of the equation. Interpret a solution in the original context and assess the reasonableness of results.
Science of Flight	MN	MA.6.6.3.3.1	Solve problems in various contexts involving conversion of weights, capacities, geometric measurements and times within measurement systems using appropriate units.
Science of Flight	MN	MA.6.6.3.3.2	Estimate weights, capacities and geometric measurements using benchmarks in measurement systems with appropriate units.

Activity/Lesson	State	Standards	
Integrating with Aeronautics	MN	MA.6.6.1.2.1	Identify and use ratios to compare quantities; understand that comparing quantities using ratios is not the same as comparing quantities using subtraction.
Integrating with Aeronautics	MN	MA.6.6.1.2.3	Determine the rate for ratios of quantities with different units.
Integrating with Aeronautics	MN	MA.6.6.2.1.1	Understand that a variable can be used to represent a quantity that can change, often in relationship to another changing quantity. Use variables in various contexts.
Integrating with Aeronautics	MN	MA.6.6.2.3.1	Represent real-world or mathematical situations using equations and inequalities involving variables and positive rational numbers.
Integrating with Aeronautics	MN	MA.6.6.3.3.2	Estimate weights, capacities and geometric measurements using benchmarks in measurement systems with appropriate units.

Exploring Aeronautics

2007 Mathematics

Academic Standards

Minnesota Mathematics

Grade 7

Activity/Lesson	State	Standards	
The Resource Center	MN	MA.7.7.1.1.3	Locate positive and negative rational numbers on the number line, understand the concept of opposites, and plot pairs of positive and negative rational numbers on a coordinate grid.
The Resource Center	MN	MA.7.7.1.1.4	Compare positive and negative rational numbers expressed in various forms using the symbols <, >, =, "less than or equal to", "greater than or equal to".
Science of Flight	MN	MA.7.7.4.1.1	Design simple experiments and collect data. Determine mean, median and range for quantitative data and from data represented in a display. Use these quantities to draw conclusions about the data, compare different data sets, and make predictions.
Science of Flight	MN	MA.7.7.4.3.3	Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.
Integrating with Aeronautics	MN	MA.7.7.1.1.3	Locate positive and negative rational numbers on the number line, understand the concept of opposites, and plot pairs of positive and negative rational numbers on a coordinate grid.
Integrating with Aeronautics	MN	MA.7.7.1.2.6	Demonstrate an understanding of the relationship between the absolute value of a rational number and distance on a number line. Use the symbol for absolute value.

Activity/Lesson	State	Standards	
Integrating with Aeronautics	MN	MA.7.7.2.2.1	Represent proportional relationships with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another. Determine the unit rate (constant of proportionality or slope) given any of these representations.
Integrating with Aeronautics	MN	MA.7.7.3.2.1	Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors.
Integrating with Aeronautics	MN	MA.7.7.3.2.3	Use proportions and ratios to solve problems involving scale drawings and conversions of measurement units.
Scientific Method(124-144)	MN	MA.7.7.4.1.1	Design simple experiments and collect data. Determine mean, median and range for quantitative data and from data represented in a display. Use these quantities to draw conclusions about the data, compare different data sets, and make predictions.
Scientific Method(124-144)	MN	MA.7.7.4.1.2	Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Know how to create data displays using a spreadsheet to examine this impact.
Scientific Method(124-144)	MN	MA.7.7.4.2.1	Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.
Scientific Method(124-144)	MN	MA.7.7.4.3.3	Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.
		Exploring Aeronautics	
		2007 Mathematics	
		Academic Standards	
Minnesota Mathematics			
Grade 8			
Activity/Lesson	**State**	**Standards**	
The Resource Center	MN	MA.8.8.1.1.2	Compare real numbers; locate real numbers on a number line. Identify the square root of a positive integer as an integer, or if it is not an integer, locate it as a real number between two consecutive positive integers.
Science of Flight	MN	MA.8.8.3.1.3	Informally justify the Pythagorean Theorem by using measurements, diagrams and computer software.
Science of Flight	MN	MA.8.8.4.1.1	Collect, display and interpret data using scatterplots. Use the shape of the scatterplot to informally estimate a line of best fit and determine an equation for the line. Use appropriate titles, labels and units. Know how to use graphing technology to display scatterplots and corresponding lines of best fit.

Integrating with Aeronautics	MN	MA.8.8.2.1.2	Use linear functions to represent relationships in which changing the input variable by some amount leads to a change in the output variable that is a constant times that amount.
Integrating with Aeronautics	MN	MA.8.8.2.2.1	Represent linear functions with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another.
Integrating with Aeronautics	MN	MA.8.8.3.1.1	Use the Pythagorean Theorem to solve problems involving right triangles.
Integrating with Aeronautics	MN	MA.8.8.3.1.2	Determine the distance between two points on a horizontal or vertical line in a coordinate system. Use the Pythagorean Theorem to find the distance between any two points in a coordinate system.
Integrating with Aeronautics	MN	MA.8.8.3.1.3	Informally justify the Pythagorean Theorem by using measurements, diagrams and computer software.
Scientific Method(124-144)	MN	MA.8.8.4.1.1	Collect, display and interpret data using scatterplots. Use the shape of the scatterplot to informally estimate a line of best fit and determine an equation for the line. Use appropriate titles, labels and units. Know how to use graphing technology to display scatterplots and corresponding lines of best fit.